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CHAL-0128

Copy 5 of 5

11 August 1958

MEMORANDUM FOR : Special Assistant to the Director for Planning and Development

THRU : Director of Development and Procurement

SUBJECT : Photographic Configuration Reliability

1. "B" Configuration Reliability

A. The following statistics are for the period 12 June (Mission 1414) to 3 August 1958 inclusive (Mission 1447). Missions prior to this date were reported in CHAL-0122 dated 30 May 1958. In the period 12 June - 3 August, sixteen (16) B missions were run. Four of the 16 missions were accomplished at Detachment C and were successful. The remaining 12 missions were performed by Detachment B. Malfunctions occurred during 3 of these missions. Two of the 3 malfunctions were caused by film transport mechanism and it was alluded the third was caused by faulty film. After study of the latter malfunction the undersigned is of opinion this to could have been caused by malfunction of film transport system. It is also my opinion good inspection and judgement could have prevented all 3 of these malfunctions. It is of interest to note the malfunctions occurred in 3 separate configurations.

B. Percentage wise there has been an appreciable improvement in reliability since the last report. As of 28 May it was 60%. As of 3 August 1958 it was 81%. There has also been a noticeable improvement in quality. This improvement can be attributed to steps taken to exclude extraneous light from the optics and possibly more attention to processing.

2. A-2 Reliability

A. During the period 23 May (MF 58-73) - 6 August 1958 (Mission 1450), twenty-eight (28) A-2 missions were accomplished. Only 2 of these were run by Detachment C and both were successful. The remaining

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26 missions were performed by Detachment B. Nine (9) of these missions had malfunctions. With exception of Mission 1450 during which 2 cameras failed, only one camera failed in each of the other 8 missions. Seven (7) of the nine mission failures were attributed to mechanisms within the shutter. The remaining two mission aborts were caused by case drive failures. Analysis indicate the following may be the contributing factors to above failures.

a. Metal fatigue (tensile failure)

b. Excessive lateral clearance of linkage on pin. Poor quality control and inspection at factory. [redacted] 25X1A on 1 August 1958 stated shutter components giving trouble were manufactured by Fairchild.

c. Utilizing same configuration, shutter etc., in consecutive missions without adequate pre-flight check and post flight maintenance. For example, Field Engineering Reports indicated same configurations, shutters and magazines were used in Missions 1416, 1417 and 1421. The shutter of right oblique failed in Mission 1417, total cycles was 7047. A-2 configuration SN 5, was used in Training Mission BF 58-79. Seventeen days later No. 5 was used on 1418 and the shutter failed. Total cycles on the shutter was 11,739 cycles. In all cases the failure was due to linkage between tripping mechanism and shutter blades. Live cycle of this linkage is 8,000, for the shutter 10,000.

B. The reliability of the A-2 has dropped from 85% to 68%. Detachment C has run very few A-2 missions during this reporting period.

3. It is recommended Detachment C be instructed to run enough test missions to thoroughly check out their equipments.

25X1A [redacted]

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